

Attorney Docket: I-2004.001 US  
Preliminary Amendment  
Express Mail: EV 829030969 US

**Amendments to the Claims:**

**Claims 1 – 9 (Canceled).**

10. (Currently amended): ~~A~~ DNA fragment comprising a nucleic acid according to ~~claims 1-9, claim 33.~~

11. (Currently amended): ~~Recombinant A recombinant~~ DNA molecule comprising a nucleic acid according to ~~claims 1-9 or a DNA fragment according to claim 10, claim 33~~ under the control of a functionally linked promoter.

12. (Currently amended): ~~Live A live~~ recombinant carrier comprising a nucleic acid according to ~~claims 1-9, a DNA fragment according to claim 10 or a recombinant DNA molecule according to claim 11. claim 33.~~

13. (Currently amended): ~~Host A host~~ cell comprising a nucleic acid according to ~~claims 1-9, a DNA fragment according to claim 10, a recombinant DNA molecule according to claim 11 or a live recombinant carrier according to claim 12. claim 33.~~

**Claims 14 - 24 (Canceled).**

25. (Currently amended). ~~Vaccine A vaccine~~ for combating *Lawsonia intracellularis* infections, ~~characterised in that it comprises a comprising at least one~~ nucleic acid according to ~~claims 1-9, a DNA fragment according to claim 10, a recombinant DNA molecule according to claim 11, a live recombinant carrier according to claim 12, a host cell according to claim 13 or a protein according to claims 14-22 claim 33,~~ and a pharmaceutically acceptable carrier.

Attorney Docket: I-2004.001 US  
Preliminary Amendment  
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26. (Currently amended): ~~Vaccine~~ The vaccine according to claim 25, ~~characterised in that it comprises~~ comprising an adjuvant.

27. (Currently amended): ~~Vaccine~~ The vaccine according to claim 25 ~~or 26, characterised in that it comprises~~ comprising an additional antigen derived from a virus or micro-organism pathogenic to pigs or genetic information encoding said antigen.

28. (Currently amended): ~~Vaccine~~ The vaccine according to claim 27, ~~characterised in that wherein~~ said virus or micro-organism pathogenic to pigs is selected from the group consisting of Pseudorabies virus, Porcine influenza virus, Porcine parvo virus, Transmissible gastro-enteritis virus, Rotavirus, *Escherichia coli*, *Erysipelothrix rhusiopathiae*, *Bordetella bronchiseptica*, *Salmonella cholerasuis*, *Haemophilus parasuis*, *Pasteurella multocida*, *Streptococcus suis*, *Mycoplasma hyopneumoniae*, *Brachyspira hyodysenteriae* and *Actinobacillus pleuropneumoniae*.

29. (Currently amended): ~~Vaccine~~ A vaccine for combating *Lawsonia intracellularis* infections, ~~characterised in that it comprises~~ comprising antibodies against a protein according to ~~claims 14-22.~~ claim 34.

Claims 30 (Canceled).

31. (Currently amended): Diagnostic test for the detection of antibodies against *Lawsonia intracellularis*, ~~characterised in that wherein~~ said test comprises a protein or a fragment thereof as defined in ~~claim 14-22.~~ claim 34.

Attorney Docket: I-2004.001 US  
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32. **(Currently amended):** Diagnostic test for the detection of antigenic material of *Lawsonia intracellularis*, ~~characterised in that wherein~~ said test comprises antibodies against a protein or a fragment thereof as defined in ~~claim 14-22.~~ claim 34.
33. **(New):** An isolated nucleic acid encoding an immunogenic *Lawsonia intracellularis* protein that hybridizes under stringent conditions with a sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, SEQ ID NO: 11, SEQ ID NO: 13, SEQ ID NO: 15, and SEQ ID NO: 17.
34. **(New):** An isolated *Lawsonia intracellularis* protein, or an immunogenic fragment thereof, having the same immunological characteristics as an amino acid sequence selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, SEQ ID NO: 12, SEQ ID NO: 14, SEQ ID NO: 16, and SEQ ID NO: 18.
35. **(New):** A vaccine for combating *Lawsonia intracellularis* infection, comprising at least one protein according to claim 34, and a pharmaceutically acceptable carrier.
36. **(New):** The isolated nucleic acid of claim 33, selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, SEQ ID NO: 11, SEQ ID NO: 13, SEQ ID NO: 15, and SEQ ID NO: 17.
37. **(New):** The isolated protein of claim 34, selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, SEQ ID NO: 12, SEQ ID NO: 14, SEQ ID NO: 16, SEQ ID NO: 18, and immunogenic fragments thereof.

Attorney Docket: I-2004.001 US  
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38. (New): A vaccine for combating *Lawonia intracellularis* infection, comprising at least one protein according to claim 37, and a pharmaceutically acceptable carrier.

39. (New): The vaccine according to claim 38, comprising at least one protein selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 12 and SEQ ID NO: 16.